

Trend Study 16C-44-05

Study site name: North Horn .

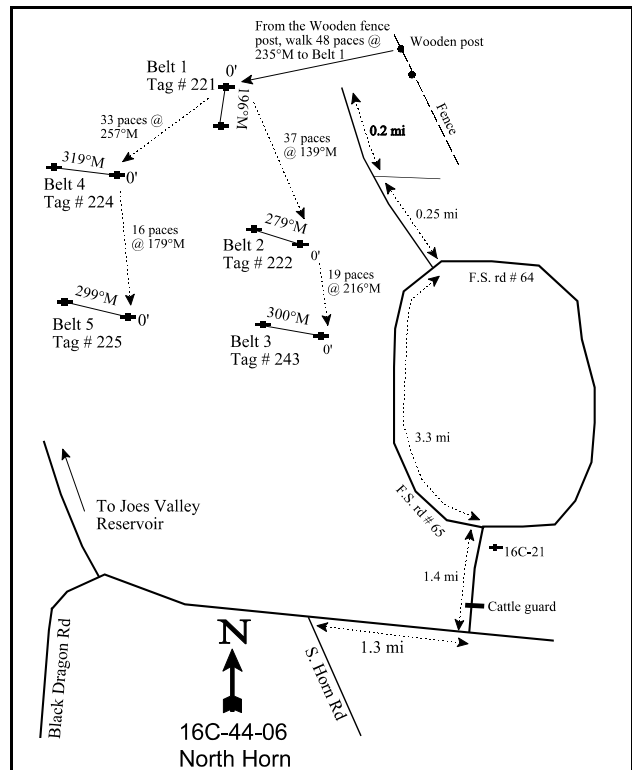
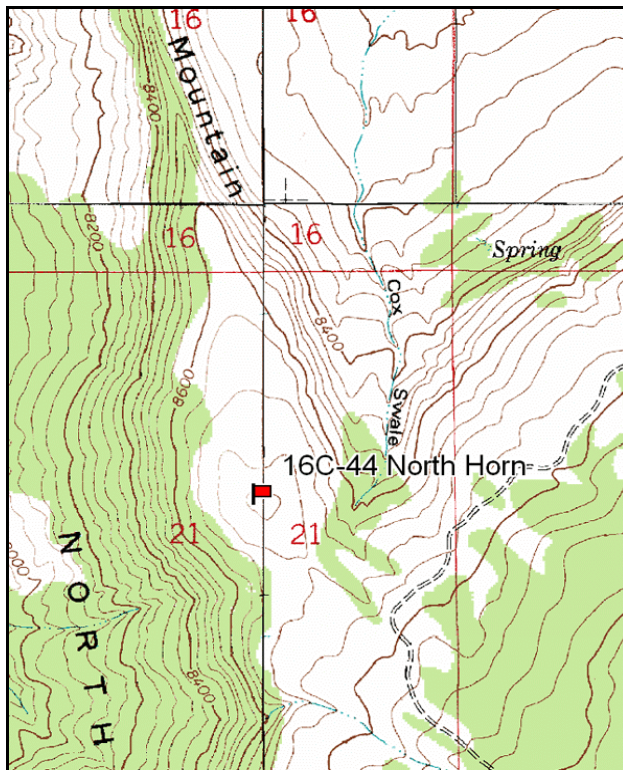
Vegetation type: True Mountain Mahogany .

Compass bearing: frequency baseline 0-100' 196 ,100-200' 279 ,200-300' 300 ,300-400' 319 , and 400-500' 299 degrees magnetic.

Frequency belt placement: No belt transects. Treat baseline like a belt and read left to right or quadrat is placed on the south or east side of line.

LOCATION DESCRIPTION

Starting on the southwest side of Joes Valley Reservoir, follow the main road up North Dragon Creek to a three-way fork at the upper end. Bear left and follow the main road about 4.0 miles to an intersection. From the intersection of the North Horn and South Horn roads, continue on the North Horn road towards the Emery County TV towers for 1.3 miles to a fork. Turn left (north) towards The Cap and go 1.5 miles to an intersection. Turn left and drive 3.3 miles to a fork on the left (NW). Turn left and drive 0.25 miles to fork on the right. Stay left and drive 0.2 miles to the top of the hill. The fence line on the east has a 20 foot section of wooden post. From the wooden posts, walk 48 feet at 235°M to the 0' stake of belt 1. Belt 1 is marked with browse tag # 221.



Map Name: Ferron Canyon

Diagrammatic Sketch

Township 18S , Range 6E , Section 21

GPS: NAD 27, UTM 12S 434306 N, 478402 E

DISCUSSION

North Horn - Trend Study No. 16C-44

The North Horn study is located southeast of Joes Valley Reservoir on the Manti-LaSal Forest. This study was established to monitor true mountain mahogany health and the possibility of declining vigor due to heavy use. Elk tend to use this area for as long as possible before snowfall pushes them to lower elevations. All five transect belts were placed in the most dense mahogany patches and each patch was about one acre in size. Elevation is 8,770 feet and is located on a southwest aspect with a slope of 10-15%. Pellet group data from 2005 estimated 15 elk, 17 deer, and 2 cow days use/acre (41 edu/ha, 43 ddu/acre, and 5 cdu/ha). Livestock use is managed by the Forest Service as part of the Horn Mountain allotment.

The soil is a moderately shallow clay with an effective rooting depth of just over 12 inches. The light-brown soil becomes lighter in color with increasing depths and correspondingly larger amounts of calcium carbonate. The profile contains a clay hardpan at about 8 inches and calcium carbonate buildup becomes obviously more evident at about 13-15 inches. Large boulders, stones, and gravel are common on the soil surface and throughout the profile. Pavement averaged 15% cover and rock was 9.7%. Soils are neutral with a pH of 7.4. Phosphorus is low at 2.5 ppm and values below 6 ppm may limit normal plant growth and development (Tiedemann and Lopez 2004). The site and surrounding area were contour trenched in the past to slow down erosion and encourage establishment of herbaceous species within the contours.

The key browse is true mountain mahogany. On average, cover was estimated at 26% in 2005 with a density of 3,120 plants/acre. Percent decadence is low and vigor is good despite moderate to heavy use. The age structure is diverse with 30% of the plants classified as young, 65% as mature, and only 5% as decadent. Several seedlings were observed in the population in 2005 (600 seedlings/acre). This compositional structure would represent a community that would be considered dynamic and increasing in both density and size. Annual leader growth averaged 8.3 inches in 2005. Average height was 3 feet with a crown of 4 feet. Other important browse species, but less abundant are: serviceberry, black sagebrush, mountain big sagebrush, shadscale, and winterfat.

The herbaceous understory is dominated by perennial grasses and forbs. Perennial grasses averaged 11% cover and forbs averaged 4% in 2005. The two grasses that dominated the understory were Salina wildrye and a sedge. Other grasses included: crested wheatgrass, smooth brome, Indian ricegrass, and Sandberg bluegrass. Forbs were dominated by fineleaf hymenopappus and gumweed aster.

The Desirable Components Index rated this site as excellent to good with a score of 90 due to excellent browse cover, age structure, low decadence on shrubs, and good perennial grass cover.

2005 winter range condition (DC Index) - excellent to good (90) High Potential scale

HERBACEOUS TRENDS --

Management unit 16C, Study no: 44

T y p e	Species	Nested Frequency	Average Cover %
		'05	'05
G	Agropyron cristatum	3	.03
G	Bromus inermis	4	.15
G	Carex spp.	99	2.99
G	Elymus salina	196	8.25
G	Oryzopsis hymenoides	10	.19
G	Poa secunda	2	.00
Total for Annual Grasses		0	0
Total for Perennial Grasses		314	11.62
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F	Arabis spp.	6	.01
F	Arenaria spp.	67	.64
F	Comandra pallida	27	.22
F	Draba spp. (a)	1	.00
F	Eriogonum alatum	14	.12
F	Hedysarum boreale	4	.45
F	Hymenoxys acaulis	2	.03
F	Hymenopappus filifolius	82	1.23
F	Leucelene ericoides	2	.03
F	Lesquerella spp.	12	.03
F	Linum lewisii	1	.00
F	Machaeranthera grindelioides	78	1.05
F	Penstemon caespitosus	19	.16
F	Pedicularis centranthera	1	.00
F	Phlox hoodii	25	.18
Total for Annual Forbs		1	0.00
Total for Perennial Forbs		340	4.17
Total for Forbs		341	4.18

Values with different subscript letters are significantly different at alpha = 0.10

BROWSE TRENDS --

Management unit 16C, Study no: 44

T y p e	Species	Strip Frequency '05	Average Cover % '05
B	Artemisia nova	1	.00
B	Ceratoides lanata	4	.03
B	Cercocarpus montanus	0	26.14
B	Chrysothamnus nauseosus	0	.15
B	Chrysothamnus parryi	0	1.32
B	Chrysothamnus viscidiflorus viscidiflorus	77	.00
B	Eriogonum corymbosum	1	.42
B	Gutierrezia sarothrae	2	.48
B	Mahonia repens	25	.00
B	Pinus edulis	3	.18
B	Pseudotsuga menziesii	43	.15
B	Symphoricarpos oreophilus	54	.45
B	Tetradymia canescens	2	.18
Total for Browse		3	29.54

CANOPY COVER, LINE INTERCEPT --

Management unit 16C, Study no: 44

Species	Percent Cover '05
Cercocarpus montanus	33.16
Chrysothamnus nauseosus	.11
Chrysothamnus parryi	.81
Eriogonum corymbosum	1.36
Gutierrezia sarothrae	1.31
Mahonia repens	.03
Pinus edulis	.36
Symphoricarpos oreophilus	.25
Tetradymia canescens	.01

KEY BROWSE ANNUAL LEADER GROWTH --
Management unit 16C, Study no: 44

Species	Average leader growth (in)
	'05
Cercocarpus montanus	8.2

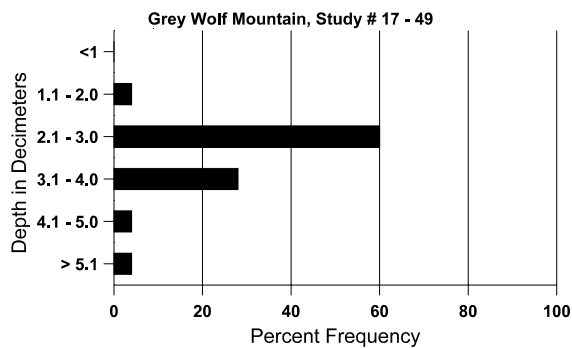
BASIC COVER --
Management unit 16C, Study no: 44

Cover Type	Average Cover %
	'05
Vegetation	38.55
Rock	9.71
Pavement	14.63
Litter	28.38
Cryptogams	.02
Bare Ground	24.32

SOIL ANALYSIS DATA --
Herd Unit 17, Study # 49, Study Name: Grey Wolf Mountain

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	ppm P	ppm K	dS/m
12.4	-	7.4	26.0	30.2	43.8	1.9	2.5	67.2	0.5

Stoniness Index



PELLET GROUP DATA --

Management unit 16C, Study no: 44

Type	Quadrat Frequency	Days use per acre (ha)
	'05	'05
Rabbit	8	-
Elk	4	17 (41)
Deer	7	17 (43)
Cattle	3	2 (5)

BROWSE CHARACTERISTICS --

Management unit 16C, Study no: 44

		Age class distribution (plants per acre)					Utilization					
Y	Plants per Acre (excluding seedlings)	Seedling	Young	Mature	Decadent	Dead	% moderate	% heavy	% decadent	% dying	% poor vigor	Average Height Crown (in)
Amelanchier utahensis												
05	20	40	-	20	-	-	100	0	-	-	0	53/54
Artemisia nova												
05	100	-	-	100	-	40	0	0	-	-	0	11/20
Artemisia tridentata vaseyana												
05	0	-	-	-	-	-	0	0	-	-	0	16/26
Atriplex confertifolia												
05	0	-	-	-	-	-	0	0	-	-	0	4/7
Ceratoides lanata												
05	0	-	-	-	-	-	0	0	-	-	0	4/4
Cercocarpus montanus												
05	3120	600	940	2020	160	20	32	47	5	-	0	37/48
Chrysothamnus depressus												
05	40	-	-	40	-	-	0	100	-	-	0	2/6
Chrysothamnus nauseosus												
05	40	-	-	40	-	-	0	0	-	-	0	9/12
Chrysothamnus parryi												
05	1340	-	120	1220	-	-	24	12	-	-	0	8/13
Chrysothamnus viscidiflorus viscidiflorus												
05	80	-	-	80	-	-	0	25	-	-	0	4/6
Eriogonum corymbosum												
05	1440	20	420	1020	-	-	21	4	-	-	0	8/12
Gutierrezia sarothrae												
05	3080	120	240	2840	-	-	0	0	-	-	0	7/7
Mahonia repens												
05	180	-	-	180	-	-	0	0	-	-	0	1/2

		Age class distribution (plants per acre)					Utilization					
Y e a r	Plants per Acre (excluding seedlings)	Seedling	Young	Mature	Decadent	Dead	% moderate	% heavy	% decadent	% dying	% poor vigor	Average Height Crown (in)
Pinus edulis												
05	60	20	40	20	-	-	0	0	-	-	0	-/-
Pseudotsuga menziesii												
05	20	-	20	-	-	-	0	0	-	-	0	-/-
Rosa woodsii												
05	0	-	-	-	-	-	0	0	-	-	0	10/13
Symphoricarpos oreophilus												
05	160	-	20	140	-	-	0	0	-	-	0	9/17
Tetradymia canescens												
05	480	-	120	340	20	-	8	21	4	-	0	7/12